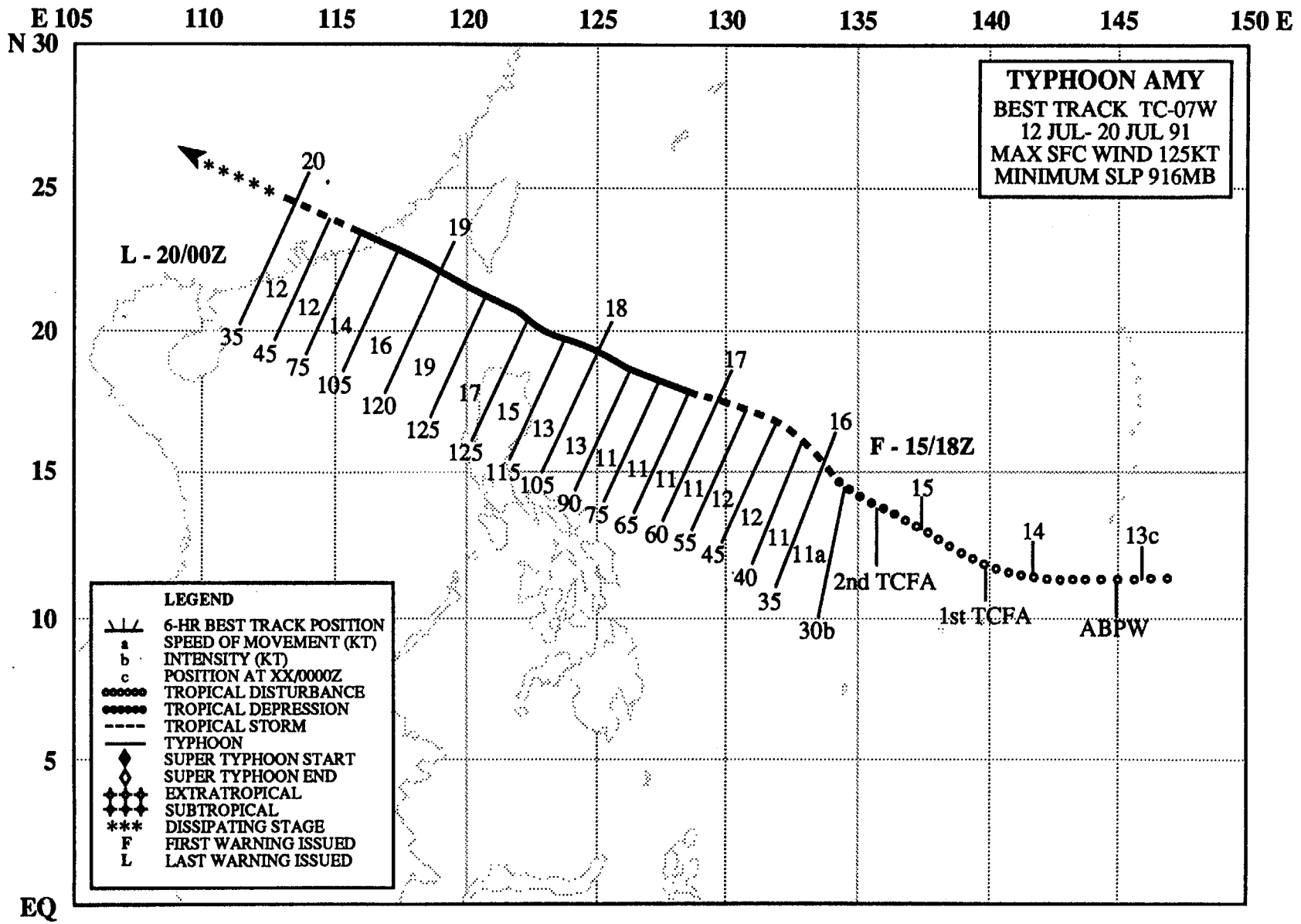
E 105
110
115
120
125
130
135
140
145
150 E
N 30
25
20
15
10
5
EQ
TYPHOON AMY
BEST TRACK TC-07W
12 JUL- 20 JUL 91
MAX SFC WIND 125KT
MINIMUM SLP 916MB
L - 20/00Z
F - 15/18Z
2nd TCFA
1st TCFA
ABPW
30b
11a
13c
LEGEND
6-HR BEST TRACK POSITION
a SPEED OF MOVEMENT (KT)
b INTENSITY (KT)
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
*** DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED

TYPHOON AMY (07W)

I. HIGHLIGHTS

The second of five tropical cyclones to form in July, Amy followed a west-northwesterly track that paralleled the one taken a week earlier by Typhoon Zeke (06W). Near Taiwan, the typhoon caused the loss of the freighter, **Blue River**, with its entire crew, and then became the deadliest typhoon to strike China this year.

II. TRACK AND INTENSITY

Amy, like typhoon Zeke (06W), took a straight-line west-northwestward track and remained south of the subtropical ridge axis. There was a small stair-step, or jog northwestward, on 16 July for about 18 hours as a mid-tropospheric shortwave trough passed by to the north. This shortwave temporarily weakened the ridge, and allowed Amy to gain latitude. Strong subsidence immediately behind the passing shortwave strengthened the subtropical ridge, once again producing a more easterly steering flow.

The tropical disturbance that became Amy was first mentioned in the Significant Tropical Weather Advisory at 130600Z after 18 hours of persistent convection. Increased convection, 2-mb pressure falls in a 24-hour period at Yap (WMO 91413), and the indication of little vertical wind shear led to the initial Tropical Cyclone Formation Alert at 141000Z. Although the overall cloud organization remained poor, deep convection persisted and a second alert followed at 151000Z. After the initial warning at 151800Z, Amy intensified at a rate of 5-10 kt (3 to 5 m/sec) every 6 hours. On the evening of 17 July, Amy began intensifying more rapidly, reaching a peak intensity of 125 kt (65 m/sec) in the Luzon Strait (Figure 3-07-1). The weakening trend began late on 18 July as the outflow became more restricted to the northwest and the typhoon approached the coast of mainland China (Figure 3-07-2). Upon making landfall, the system dissipated rapidly over the mountains in southeastern China. The final warning was issued at 200000Z.

III. FORECAST PERFORMANCE

Although the overall track forecast errors were below average there were some flaws: 1) the track acceleration in the Taiwan Straits was not anticipated or handled well by the dynamic models; 2) the forecast for the observed strong intensification was handled as a low probability alternate scenario until it actually was observed; and, 3) the unusual extension of gale and storm force winds far to the northeast of the typhoon was not anticipated. For example, Amy was at peak intensity in the Luzon Strait when the **USNS Hassayampa** reported 77 kt (40 m/sec) winds at a position 315 nm (585 km) to the northeast.

IV. IMPACT

Hengchun (WMO 46752) located on the southern tip of Taiwan reported sustained winds of 66 kt (33 m/sec) with gusts of 130 kt (65 m/sec) and an unusually high peak wind gust of 150 kt (75 m/sec) at 182000Z, some 30 nm (55 km) from Amy's center. The 16,000 ton freighter, **Blue River**, with 31 persons onboard, capsized and sank near the Pescadores Islands west of Taiwan. There were no survivors. On 19 July, Amy plowed into southeastern China, 99 people were killed, at least 5000 injured and over 15,000 homes destroyed.

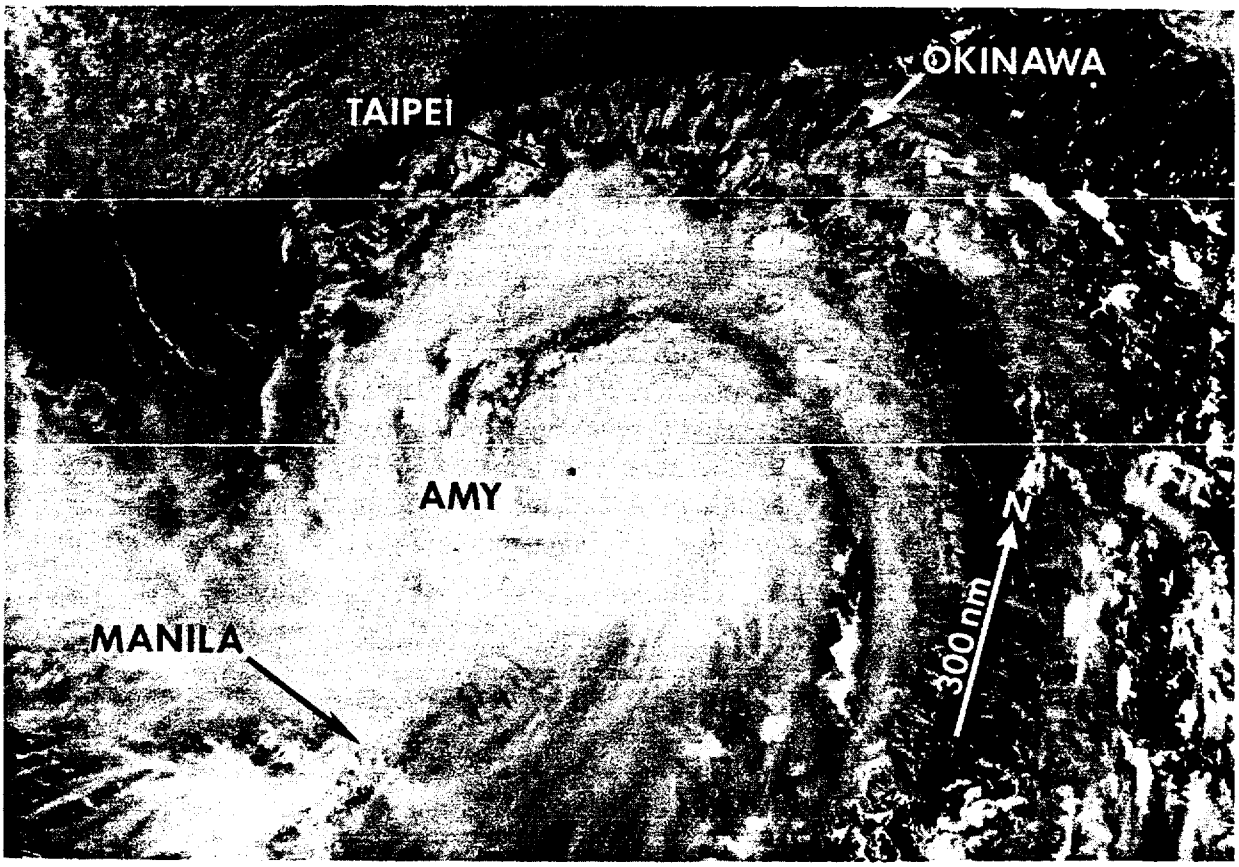

Figure 3-07-1. Amy, with an intensity near 115 kt (60 m/sec), passes through the Luzon Strait with a small 10 nm (20 km) diameter eye (180546Z July NOAA visual imagery).

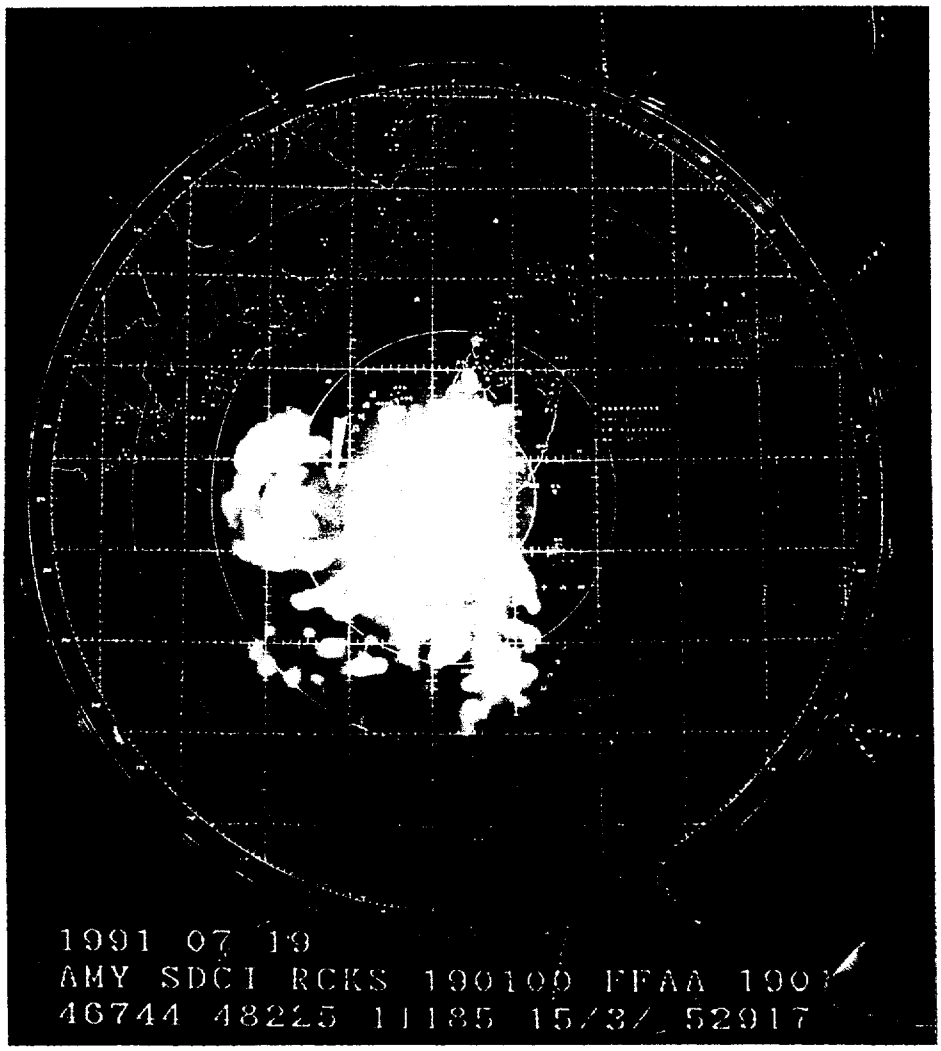

Figure 3-07-2. The radar at Kaohsiung (WMO 46744) at 190100Z July reveals tightly curved concentric rainbands surrounding Amy's eye (Photograph courtesy of the Central Weather Bureau, Taipei, Taiwan).